Vygotsky or Piaget: A developmentally appropriate approach for correcting faulty reasoning in a 5 year-old child

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**Introduction**

During a brief interaction with his kindergarten teacher, Ms. Tollefson, 5 year-old Rodney articulates a naive schema of the life of a teacher. Rodney indicates that he believes that his teacher is at school “cause you love us” and is not paid because she can “get food from the cafeteria.” Ms Tollefson uses direct instruction to help Rodney redefine her as having a lifestyle just like his mom and dad. The kindergarten teacher appeals to the young boys reasoning by presenting opposing facts, such as a picture of her skiing at Winter Park, in order to shift his belief that she can’t “be other things besides a teacher.” At the close of the case, Rodney states, “I know you’re just a teacher…I knew it! You were trying to trick me ‘cause it’s Halloween!” It seems Ms. Tollefson’s greeting of “Happy Halloween!” seems to trigger a preexisting schema that says, “at Halloween, what comes before is a trick when no treat is given.”

First, the paper will examine the important details of the conversation between Ms. Tollefson and Rodney from the perspective of two theorists, Vygotsky and Piaget. Second, simple suggestions for a lesson plan will be presented based on the fundamentals of Vygotsky’s theory to support Rodney through his zone of proximal development towards an appropriate upper limit.
The Case

Jacobs (2001) states, “Both Piaget and Vygotsky are considered fundamental to understanding how children construct an understanding of the world through interaction with the environment” (p. 125). According to Bruner (1997), “Piaget’s genius was to recognize the fundamental role of logic-like operations in human mental activity” (p. 65).

Piaget characterizes cognitive development in terms of a series of step-wise stages—sensori-motor, pre-operational, concrete-operational, and formal-operational (Kitchener, 1996, p 68). Using the language of Piaget, Ms. Tollefson’s use of direct instruction fails because it requires Rodney’s cognition to be concrete operational. Based on the boy’s age, he is pre-operational.

In the second stage, pre-operational period (2–7 years) there is the beginning of socialization and the appearance of language, but the individual has not yet distinguished his/her own point of view from that of others, and this lack of differentiation Piaget labels egocentrism (“the unconscious [inconsciente] confusion of one’s own point of view with that of others”) (Kitchener, 1996, p.38).

The reasoning of young children is said to be preoperational (Siegler 1998, p3 ). From the point of view of Piagetian theory, the boy encounters bits of information that should lead to disequilibrium. Five-year-old Rodney encounters a check that looks like the ones his mom and dad bring home. He then hears that his teacher has a job, because she needs money to pay for things like food, medicine and clothes. Furthermore, she has a home where she sleeps.
The dialogue between Rodney and Ms. Tollefson is a learning experience that, according to Piaget, cannot lead to a thinking change because Rodney is under the influence of preoperational reasoning and thought. Felton (1976) states that rather than using logic, the preoperational child reasons and explains events on the basis of intuition or hunches and how things look to him (p. 9).

In contrast, Vygotsky would argue that Ms. Tollefson’s conversation with Rodney, although being ahead of his ability is the right thing to do. Learning in the zone of proximal development makes a necessary contribution to cognitive development. We should therefore not wait until the child is mature enough to handle the new concept to be taught; we should, rather make use of education to bring the child to maturity, in other words make a contribution to its development such that it can indeed deal with the material (Tomic & Kingma, 1996, p. 24).

Only by interacting with adults, Vygotsky claimed, do children finally infer the sense of a concept. (Daniels, 1996, p. 10). From that perspective, Ms. Tollefson’s interaction with Rodney is the correct strategy, but given his zone of proximal development, she should use intense scaffolding to help the young boy comprehend the similarities between the teacher and everyday folks like his parents.

**What does Piaget Say?**

Piaget’s theory would incline Ms. Tollefson to reason that since structural changes are a necessity for development, the lesson with Rodney is futile. The
child is in Piaget’s preoperational stage and accommodates information using preoperational reasoning.

According to Piaget, children must go through the process of reconfiguration of their own mental schema for themselves. Teachers must not interfere with this process by imposing their ready-made solutions because children will accept their authority without making the knowledge their own. (Jordan, Carlile & Stack, 2008, p. 57).

Based on the above idea, the ideal methodology for changing Rodney’s schema would be discovery learning with no teacher intervention. The teacher would need to wait until the child’s own mechanism of intelligence has matured before initiating any form of discovery learning. The teacher should not impose new facts about teachers since it is clearly beyond Rodney’s available mechanisms of comprehension.

A child may memorize the given formula relating division to multiplication without making an attempt to understand it for the simple and valid reason that he has not yet developed the requisite mental instruments for its comprehension. (Furth & Wachs, 1975, p. 34)

Therefore, it could be argued that Rodney may state agreement with Ms. Tollefson’s facts about teachers but not comprehend because he lacks the requisite mental instruments.

**What would Vygotsky do?**

For Vygotsky, language is the most important ‘tool’ for social interaction and knowledge construction. (Jordan et. al., 2008, p. 59) Therefore, using
Vigotsky’s approach, Ms. Tollefson would need to recognize Rodney’s personal zone of proximal development (ZPD). According to Gillen (2000), Vygotsky’s definition of the ZPD is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (Vygotsky, 1978, p.86). Adults and peers interact with children in this zone by supporting them or “scaffolding” their learning and helping them to reach a higher level of functioning (Berk & Winsler, 1995). According to Wood and Wood (1996), the metaphor of scaffolding came in to vogue in 1976 in the context of tutorial interactions between an adult and individual children (p. 5).

Glassman (1995) stated, “a central idea within Vygotsky’s paradigm of human development is that activity leads thinking” (p. 474). Therefore, although Rodney’s intellectual reasoning may prevent him from grasping the concepts, Ms. Tollefson is empowered by Vygotsky to pursue scaffolding.

**Lesson Plan**

According to Bruner (1997) the emphasis of each theorist body of work leads to sharp divergences in their approach to mental growth (p. 63). The language and substance of the two theories carry with them differing implications for instruction or lesson plan. Unlike Piaget, Vygotsky affirms the role of teachers and experts in guiding learning (Jordan et. al., 2008, p. 59). Ms Tollefson’s role, then, is to help Rodney in the formation of the concept of a teacher.
Tharp (1993) summarized 7 types of teaching which have been seen to provide assistance to “bring the performance of the learner through the ZPD into an independent capacity where the means of assistance are woven into a meaningful dialogue”. Two of the 7 scaffolding methods that would be useful in developing Rodney’s understanding of what it means to be a teacher are as follows:

1) Cognitive structuring: “explanations”. Cognitive structuring assists by providing explanatory and belief structures that organize and justify new learning and perceptions and allow the creation of new or modified schemata.

2) Task structuring: chunking, segregating, sequencing, or otherwise structuring a task into or from components. It assists learners by modifying the task itself, so the units presented to the learner fit into the ZPD when the entire structured task is beyond that zone.

(Tharp, 1993:271–272)

The learning should be broken into chunks dealing with: 1) Teaching is a job; 2) Teachers live outside the building; 3) Teachers can be other things. In order to bring Rodney to the upper limit, each chunk would be taught using cognitive structuring as a scaffolding technique.

The following dialogue is an example of cognitive structuring scaffolding that could be used to teach the “Teaching is a Job” chunk:

**Teacher:** “Rodney, is this a check?” [Show the child a teacher’s city issued check]
Rodney: “Yes, It looks just like the ones my mom and dad bring home all the time.”

Teacher: “Mom and dad get a check because they work, right Rodney?”

Rodney: “Yes, mom and dad work because they need to buy food.”

Teacher: “Rodney, say this after me.”

Rodney: “Okay.”

Teacher: “Say this after me, people who work get a check because they need to buy food.”

Conclusion

During a brief interaction with his kindergarten teacher, Ms. Tollefson, 5 year-old Rodney articulates a naive schema of the life of a teacher. The teacher uses direct instruction to help Rodney revamp is schema of the lifestyle of teachers. At the close of the case, the teacher’s statement of “Happy Halloween” seems to trigger a rule that negates the factual statements of Ms. Tollefson. In the opinion of the authors, Vygotsky’s theory of development and his belief in the role of the teacher as a facilitator of knowledge transfer provides the route to an age appropriate teaching strategy.

The teacher has a fundamental role to play in creating the conditions and engineering the interventions in children’s learning which will, in Vygotskian terms, capitalize on the ‘zone of proximal development’. (Burton, 1996, p. 442)
Therefore, we conclude that Ms. Tollefson should use cognitive structuring and according to task structuring break the teaching into 3 chunks in order to scaffold Rodney to the upper limit. Markers of the upper limit would include the recognition that Ms. Tollefson has a job, lives in a home, and does other things besides teaching. The brief conversation has already exposed Rodney’s lower limit.
References


